

# Cooperative Learning

## SHARING IDEAS ABOUT THE LESSON

**Developing Proof** Work with a partner to complete the proof for the Congruent Complements Theorem: *If two angles are complementary to the same angle or to congruent angles, then they are congruent.* (The proof shown below has missing steps and missing reasons.) Use the diagram at the left.

**Given:**  $\angle 1$  is the complement of  $\angle 2$ .  $\angle 3$  is the complement of  $\angle 4$ .  
 $\angle 2 \cong \angle 4$ .

**Proof:**

$\angle 1$  is the complement of  $\angle 2$ .

$$m\angle 1 + m\angle 2 = 90^\circ$$

$\angle 3$  is the complement of  $\angle 4$ .

$$m\angle 3 + m\angle 4 = 90^\circ$$

$$m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$$

$$\angle 2 \cong \angle 4$$

$$m\angle 2 = m\angle 4$$

$$m\angle 1 + m\angle 4 = m\angle 3 + m\angle 4$$

$$m\angle 1 = m\angle 3$$

$$\angle 1 \cong \angle 3$$

**Given.**

[?] DEF. OF COMPLEMENTARY ANGLES

[?] GIVEN

Def. of complementary angles

Transitive Property of Equality

[?] GIVEN

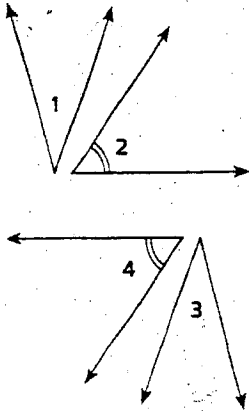
[?] DEF. OF CONGRUENT ANGLES

[?] SUBSTITUTION PROPERTY OF EQUALITY

[?] SUBTRACTION PROPERTY OF EQUALITY

Def. of congruent angles

Remember that each of the reasons listed in the right column must be "Given," a definition, a postulate, or a theorem (or property).



Set: KINDS OF PIZZA

Relationship: "tastes as good as"

Example: PEPPERONI PIZZA tastes as good as Cheese Pizza.

Reflexive: PEPPERONI PIZZA tastes as good as PEPPERONI PIZZA ✓

Symmetric: If pepperoni pizza tastes as good as Cheese Pizza,  
then cheese pizza tastes as good as Pepperoni Pizza. ✓

Transitive: If pepperoni pizza tastes as good as cheese pizza  
and cheese pizza tastes as good as sausage pizza,  
then pepperoni pizza tastes as good as sausage pizza. ✓

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